

A NEW SPECIES OF *ERIGERON* (ASTERACEAE: ASTEREAEE) FROM
CHIHUAHUA, MÉXICO

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ABSTRACT

A new species, *Erigeron byei* *spec. nov.*, is described from south-central Chihuahua, México. Based on similarities in habit, vestiture, and capitular and floral morphology, it appears to be most closely related to *E. ortegae* S.F. Blake and *E. ozyphyllus* E. Greene, and is placed as the third species in *Erigeron* sect. *Spinosi*. The new species has nine pairs of chromosomes.

KEY WORDS: *Erigeron*, Asteraceae, Astereae, México

The following previously undescribed species is recognized from the mountains of west-central Chihuahua, México.

Erigeron byei Sundberg & Nesom, *spec. nov.* (Figure 1) TYPE: MÉXICO.

Chihuahua: Mpio. Batopilas, 2.5 mi S of Creel on main road to Batopilas, steep, terraced slopes, pine-oak woodlands, 19 May 1985, R. Scott 471 with T. Ayers, M. Lavin, & A. Whittemore (HOLOTYPE: TEX!; Isotypes: ARIZ!, ASU!, COLO!, GH!, ILL!, MEXU!, NY!, OBI!, RM!, UNM!, US!).

E. ortegae S.F. Blake similis vestimento fere glabro, foliis caulinis bracteatis, gemmis erectis, phyllariis trinerviis, et ligulis circinatatis sed differt statura multo parviore, rhizomatibus tenuibus, foliis basalibus persistentibus, et capitulis parvioribus flosculos parviores efferentibus.

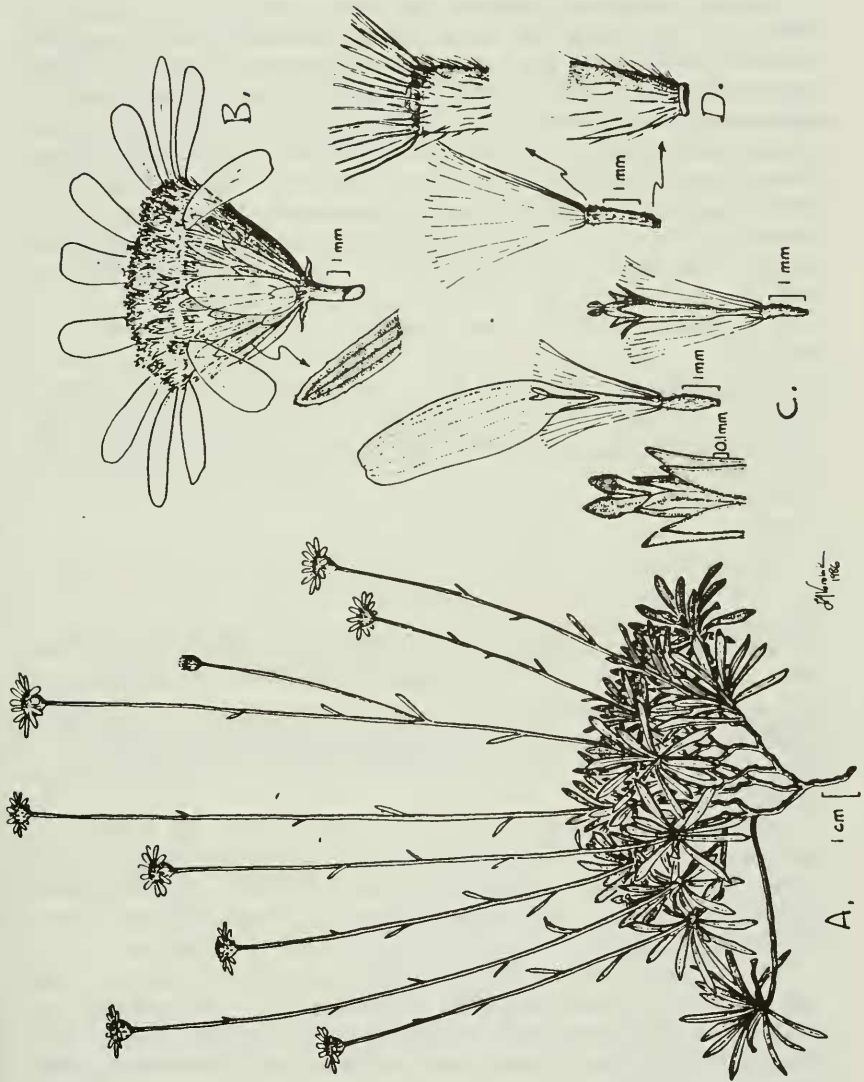


Figure 1. *Erigeron byei*. A. Habit. B. Capitulum and detail of phyllary. C. Details of ray and disc flowers. D. Achene.

Perennial, caespitose, glabrous herbs from a system of thin, lignescent, rhizomelike caudex branches. Stems 7-20 cm tall, usually with 1-2 ascending branches near midstem. Basal leaves persistent in rosettes, sessile, narrowly elliptic-oblongate, 8-26 mm long, 1-2 mm wide, entire, 1 nerved or faintly 3 nerved, with a mucronulate apex, the cauline leaves few and sharply reduced in size to linear bracts 1-4 mm long. Heads 5-8 mm wide, erect in bud, solitary on nearly naked peduncles 5-10 cm long; phyllaries in 3-4 strongly graduated series, elliptic-lanceolate with obtuse to acute apices, thin herbaceous with scarious margins and 1-3, filiform, orange resinous nerves, sometimes purple tinged, at least on the upper half, the inner series 4-5 mm long, 0.5-0.8 mm wide. Ray flowers 9-18, the corollas white, drying white or purplish, 5-7 mm long, the ligules 1.4-2.0 mm wide, coiling at the tips. Disc flowers 24-29, the corollas 3.5-4.2 mm long, not inflated or indurated; collecting appendages of style branches deltate, 0.1-0.2 mm long. Achenes sparsely strigose, cylindrical to slightly flattened, 1.8-2.5 mm long, 0.4-0.5 mm wide, with (2-3)4(5) thin, orange nerves; pappus of 15-27 barbellate bristles 2.9-3.8 mm long and a few outer setae 0.1-0.5 mm long. Chromosome number, $n=9$ pairs (Fig. 1), as determined from meiotic counts from buds collected with the type specimens, Scott 471.

Additional collections examined: MÉXICO. Chihuahua: Mpio. Batopilas: N of Quirire, pine-oak forest, along arroyo in crevice of bedrock, 3 Jun 1973, Bye 3951 (UCR); 4.5 mi N of Quirire, in arroyo (Río Batopilas drainage), pine-oak forest with *Arbutus*, *Buddleia*, from rock ledge in arroyo, 2150 m, 31 May 1984, Bye, et al. 12841 (COLO, TEX); 15.1 km SW of the Creel-Guachochi road on the road to Batopilas; on wet, vertical rock in small canyon, SE-facing, mostly shaded, 2390 m, with *Quercus hypoleucoides*, *Q. coccolobifolia*, *Q. cf. fulva*, *Pinus latifolia*, and *Alnus*, 18 Oct 1986 [past flr], Spellenberg & Zucker 8932 (TEX).

Erigeron byei is named for Dr. Robert Bye, of the Jardín Botánico del Instituto de Biología, UNAM (México), who first collected the species. He continues to be an active collector and student of the flora of the Sierra Madre Occidental, particularly that of central Chihuahua. The new species appears to be narrowly endemic to the area just south of Creel, Chihuahua.

The new species is most similar to *Erigeron ortegae* S.F. Blake (= *Aster spinosus* Benth., see Sundberg 1986) and its putative sister species, *E. oxyphyllus* E. Greene (Nesom 1989), in its nearly glabrous vestiture, cauline leaves strongly reduced in size to linear bracts, erect buds, thin herbaceous phyllaries with three, prominent, orange resinous nerves, ray flowers with short, white, coiling ligules, deltate collecting appendages of the disc style branches, and 4-5 nerved achenes. It differs from both species primarily in its habit and much smaller stature. Both *E. ortegae* and *E. oxyphyllus* produce stems 0.5-2.5 m tall from a system of thick rhizomes, and the plants are essentially leafless by flowering. *Erigeron byei* is distinctly caespitose in habit, as the plants produce

a system of slender rhizomes or rhizomelike caudex branches with clustered rosettes of persistent basal leaves at the rhizome tips. Further, the heads of *E. byei* are smaller and have fewer rays than either of the other species.

Despite the striking difference in habit, these three species appear to be most closely related among themselves. *Erigeron ortegae* and *E. oxyphyllus* have been segregated as *Erigeron* sect. *Spinosi* (Alexander) Nesom & Sundberg (Nesom 1989), and *E. byei* joins them as the third species of the section. A full taxonomic treatment of *E. ortegae*, with a detailed discussion of relationships, will be presented separately (Sundberg in prep.).

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LITERATURE CITED

- Nesom, G.L. 1989. Infrageneric taxonomy of New World *Erigeron* (Compositae: Astereae). *Phytologia* 67:67-93.
- Sundberg, S.D. 1986. The systematics of *Aster* subg. *Oxytripolium* (Compositae) and historically allied species. Ph.D. dissertation, Univ. Texas, Austin.